REMARKS

Claims 1-3, 6-10, 12, 13, and 19 were pending in the present application. By this Amendment, Applicants have amended claim 1. Claim 12 has been canceled without prejudice to Applicants' right to present the canceled subject matter in a future continuing application. The present Amendment does not introduce any new matter, and thus, its entry is respectfully requested. Upon entry of the Amendment, claims 1-3, 6-10, 13, and 19 will be pending and under examination.

The November 17, 2008 Office Action

Previous Rejections Withdrawn

The Office Action indicated that the previous rejections of claim 12 under 35 U.S.C. §101, claims 1, 5, and 11 under 35 U.S.C. §112, first paragraph, claims 1-4, 7-10, 12, and 13 under 35 U.S.C. §103, and claims 6 and 13 under 35 U.S.C. §112, second paragraph, have been withdrawn.

In response, Applicants acknowledge and appreciate the withdrawal of these rejections.

Rejection Under 35 USC §112, Second Paragraph

In the Office Action, claims 1-3, 6-10, 12, 13, and 19 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. According to the Office Action, Applicants' previous response as it pertains to the biological deposit requirement created some ambiguity and confusion concerning the nature of the deposit set forth for Mab 2F5 (ECACC

Accession No. 90091704). The Office Action stated that it appears that this designation is directed toward the **hybridoma** cell line producing Mab 2F5, not the Mab itself. The Office Action indicated that amendment of the claims to recite that Mab 2F5 is produced by the hybridoma cell line having the ECACC Accession No. 90091704 would overcome the rejection.

In response, Applicants have amended claim 1 as suggested in the Office Action. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-3, 6-10, 12, 13, and 19 under 35 U.S.C. §112, second paragraph.

Office Action's Indication of Allowable Subject Matter

The Office Action stated that claims 1-3, 6-10, and 19 appear to be free of the prior art of record and would be allowed upon amending the claim language as suggested above in connection with the rejection under 35 U.S.C. §112, second paragraph.

In response, Applicants acknowledge and appreciate the Office Action's recognition of allowable subject matter. In light of the amendments made herein to claim 1, it is Applicants' understanding that the above-noted claims are in condition for allowance.

Rejection Under 35 USC §112, First Paragraph - Enablement

Claims 12 and 13 were rejected under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the enablement requirement. According to the Office Action, the rejected claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to

make and/or use the invention. The Office Action's full rationale for rejecting the claims is set forth at pages 5-8.

The Office Action states that claim 12 is directed toward a method for the prophylaxis or treatment of HIV-1 infection by administering a Mab that is anti-idiotypic to Mab 2F5 and has the characteristics of Mab 3H6. The Office Action further notes that claim 13 is directed toward a pharmaceutical composition or vaccine comprising said antibody. According to the Office Action, the premise of the invention is directed toward the administration of an anti-idiotypic antibody (Ab2) to a patient. The Office Action states that Ab2 was generated against an HIV-1 neutralizing Mab (Ab1) designated Mab 2F5 and that therefore, Ab2, upon administration to patients, may act as a competitive/noncompetitive inhibitor of Ab1 or it may act as an antigen to induce the formation of anti-anti-idiotypic antibodies (Ab3) that have similar properties to the parental antibody (Ab1). Moreover, the Office Action notes that the disclosure states "In principle, Ab2 beta antibodies raised against antibodies neutralizing HIV-1 might have an enormous potential for vaccine design" (p. 3). Thus, in the opinion expressed in the Office Action, Applicants are clearly interested in employing the claimed compositions as immunogens in a vaccinating composition.

In rejecting the claims, the Office Action has concluded that it would take undue experimentation for one of ordinary skill in the art to practice the claimed invention. In that regard, the Office action asserts the following.

1) According to the Office Action, the disclosure fails to provide adequate guidance pertaining to the correlates of human protection and methods for eliciting protective/therapeutic

immune responses. The Office Action states that, to date, it is not currently known what type of immune response will provide a protective/therapeutic outcome.

2) According to the Office Action, the disclosure fails to provide any guidance pertaining to the immunologic/pharmacologic properties of any given therapeutic Mab. The Office Action asserts that the disclosure fails to provide detailed guidance pertaining to the binding specificity, coding potential, affinity, specificity, titer, and pharmacological profile of any given therapeutic Mab.

3) According to the Office Action, the disclosure fails to provide any working embodiments demonstrating that administration of an anti-idiotypic antibody (e.g., Mab 3H6) or an anti-anti-idiotypic antibody is capable of providing a therapeutic or protective outcome. The Office Action asserts that the prior art is unpredictable and that therefore, multiple working embodiments would be required to enable the claimed invention. The Office Action then further asserts that the specification fails to provide any data pertaining to the administration of Ab2 or the generation of therapeutic Ab3.

4) According to the Office Action, the state-of-the-art vis-a-vis HIV vaccine development is one of unpredictability (Moore and Burton, 1999; Haynes *et* al., 2005; Montefiori, 2005; Trkola *et* al., 2005; Gallo, 2005; Walker and Burton, 2008). The Office Action further asserts that several problems have hampered the development of an efficacious HIV vaccine, including that: 1) the correlates of human protection remain to be elucidated; 2) it is not readily manifest which immunogens, carriers, adjuvants, and immunization regimen should be employed in the generation of a therapeutic/prophylactic immune response; 3) there are currently no animal models that allow direct extrapolations of vaccine efficacy; 4) HIV-1 and

-2 exist as a quasispecies that leads to immune avoidance and rapid immune escape; 5) HIV can reside in a number of different reservoirs in a latent state, thereby avoiding detection; and 6) it is not readily manifest how to generate a long-lasting high-titer immune response to HIV.

According to the Office Action, Moore and Burton (1999) suggests that it might not be possible to generate Nabs of the requisite titer and specificity to effectively combat HIV-1 infection. This, the Office Action states, is because experimental animal data suggests that partial neutralization (i.e., 90% neutralization) is insufficient to inhibit HIV-1 infection. The Office Action asserts that "It may well require 100% neutralization, a figure not currently seen." The Office Action further states that Haynes *et* al. (2005) identifies some of the problems with using Nab 2F5 as a target. This Mab is a polyspecific autoantibody that also reacts with the phospholipid cardiolipin and, the Office Action asserts, the authors concluded that "current HIV-1 vaccines may not induce these types of antibodies because of autoantigen mimicry of the conserved membraneproximal epitopes of the virus." Furthermore, the Office Action states that Trkola et al. (2005) note that it will be difficult to generate high-titer Nabs with the desired specificity and that the vast majority of patients in a passive antibody study displayed viral rebound and immune escape in a short period of time. Thus, the Office Action states, it is not readily manifest how effective Nabs will be at combating HIV-1 infection. The Office Action further asserts that Montefiori (2005) also concluded that it will be extremely difficult to generate high-titer Nabs with the desired specificity.

Accordingly, the Office Action expresses the opinion that when all the aforementioned factors are considered in toto, practicing the claimed invention would clearly require undue experimentation by the ordinarily skilled artisan.

In response, Applicants first note that claim 12 has been canceled, rendering moot its rejection.

With respect to claim 13, Applicants respectfully traverse. Contrary to the Office Action's assertion, the subject matter of claim 13, i.e. "a pharmaceutical composition or vaccine, comprising an antibody or antibody fragment defined in claim 1, and a pharmaceutically acceptable carrier," is fully described in the specification in such a way as to enable one skilled in the art to make and/or use the invention, as required by 35 U.S.C. §112, first paragraph. Applicants note the specification's statement at page 10, lines 22-23, that "the anti-idiotypic antibody 3H6 may be used . . . directly as a vaccine to induce protective and neutralizing immune responses". Moreover, making a pharmaceutical composition or vaccine as claimed in claim 13 is within the general knowledge of the ordinarily skilled artisan in the field of immunology/vaccine development. All of the methods needed to practice the invention, i.e. to prepare the pharmaceutical composition or vaccine claimed in claim 13, that are not specifically detailed in the present specification are known to those of skill in the art. Furthermore, neither the selection of a suitable "pharmaceutically acceptable carrier" (the skilled artisan is aware of which compounds fall under this term) nor the determination of the amount of the antibody or antibody fragment comprised in the pharmaceutical composition or vaccine requires undue experimentation. Any experimentation that one of ordinary skill in the art might need to undertake to practice the invention as claimed would be routine. Moreover, compliance with section 112 does not require the extensive experimental studies or "detailed guidance pertaining to the . . . pharmaceutical profile" of the antibody that the Office Action suggests.

Accordingly, for at least the reasons noted above, claim 13 is fully enabled by the specification and as such, Applicants respectfully request reconsideration and withdrawal of its rejection under 35 U.S.C. §112, first paragraph.

In view of the amendments and remarks presented herein, Applicants believe all of the rejections set forth in the November 17, 2008 Office Action have been fully overcome and the claims are in condition for allowance.

No fee is believed due in connection with the filing of this paper. However, if any fee is deemed necessary, authorization is hereby given to charge such fee, or credit any overpayment, to Deposit Account No. 02-2135.

The Office is invited to telephone the undersigned if it is deemed to expedite allowance of the application.

Respectfully submitted,

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